

DETAILED ACTION

1. This Office Action follows a response filed on March 9, 2009. Claims 1-3, 5, 6, 13-16 and 18 have been amended; claims 4, 8, and 17 have been cancelled; claims 19 and 20 have been added.
2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on March 9 2009 has been entered.
3. In view of amendment(s) and remarks the rejections of claims 6 and 8-12 under 35 U.S.C. § 103(a) as being unpatentable as obvious over Klock et al. (EP 0 402 213 A1) in view of Rombach et al. (U. S. Patent 3,153,009), Aurenty et al. (U. S. Patent 6,472,054), and Kroggel et al. (U. S. Patent 5,559,175) have been withdrawn.
4. Applicant's arguments with respect to claims 6 and 9-12 have been considered but are moot in view of the new ground(s) of rejection.
5. Claims 19 and 20 have been withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, being dependent upon claim 1, which has been withdrawn; there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on March 9, 2009.
6. Claims 6 and 9-12 are active.

Claim Objections

7. Claim 6 is objected to because of the following informalities: claim 6 does not recite "%" after a tensile creep; it should be "...having a tensile creep of less than 2.5%". Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 9-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 9-12 recite the limitation "of claim 8" in line 1. There is insufficient antecedent basis for this limitation in the claims because the claim 8 has been cancelled.

For further examination it is the Examiner position that claims 9-12 are dependent upon claim 6.

Claim Rejections - 35 USC § 103

9. The text of this section of Title 35 U.S.C. not included in this action can be found in a prior Office Action.

10. Claims 6, 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable as obvious over Klock et al. (EP 0 402 213 A1) in view of Rombach et al. (U.S. Patent 3,153,009) and Philips (U. S. Patent 4,297,262 or U. S. Patent 4,276,351).

With regard to the limitation of instant claims 6, 10 and 11, Klock discloses a process for preparing PVB composition having a mixture of butyral meso and butyral racemic stereoisomers using aqueous polyvinyl alcohol solution and butyraldehyde (abstract, page 5, lines 10-12). Agitation of reaction mixture takes place between 5 and 12⁰C during initially 10-90 minutes then the temperature increase up to 80⁰C and the process continuous during 1-4 hours. Dry weight PVA concentration is in the range 8-15% based on the total weight of solution. A surfactant (sodium dodecylbenzene sulfonate, **sodium lauryl sulfate or sodium dioctylsulfosuccinate**) is present in the amount of **0.3-0.4-wt%** based on the dry weight of PVA. In the next steps the **pH raises up to 9-11** and PVB composition is neutralized with neutral water (page 2, lines 3-34, examples 1-4, pages 5 and 6). Hydrochloric **acid** with density 1.18 is used as acid compound (example 1, page 5, line 20). The final products have a **hydroxyl number between 18 and 22 and meso to racemic ratio (M/R) in the claimed range** (examples 1-4, pages 5 and 6).

Klock does not disclose that pH mixture is from about 1.3 to about 2.5.

In view of substantially identical process, it is the examiner position that Klock 's process for preparing PVB composition possesses this property because it contains substantially identical main steps, used the same meso and racemic stereoisomers of butyral monomers, acidic aqueous PVA solution having the same concentration and

hydrochloric acid, the same surfactants in the amount within the claimed range and the obtained final products have the same main properties (hydroxyl number and meso to racemic ratio (M/R) are within the claimed ranges). Since the USPTO does not have equipment to do the analytical test, the burden is now shifted to the applicant to prove otherwise. In re Best, 195 USPQ 430, (CCPA 1977).

Klock does not disclose in step (b) stirring reaction mixture (RM) at a temperature in the range of from 80⁰C to about 100⁰C.

Rombach discloses that the reaction mixture was heated at 90⁰C under agitation for 81 minutes, which is exactly within the claimed range.

Both references are analogous art because they are from the same field of endeavor concerning new processes for producing polyvinyl butyral resin.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to adjust the temperature of the reaction mixture within the claimed range as taught by Rombach in Klock's process for producing polyvinyl butyral resin with reasonable expectation of success.

Even if the combined disclosure of Klock and Rombach does not satisfy the requirements of 35 U.S.C. 103(a), particularly with respect to the pH mixture and the temperature of agitation (stirring), it still would have been obvious to one of ordinary skill in the art to arrive at the claimed process for preparing PVB composition, because it appears that the claimed process for preparing PVB composition is within the generic disclosure of Klock and Rombach, and a person of ordinary skill in the art would have expected all embodiment of Klock and Rombach to have similar properties. Applicant

has not demonstrated that the differences, if any, between the claimed process for preparing PVB composition and the process for preparing PVB composition by Klock and Rombach give rise to unexpected results. The evidence presented to rebut *prima facie* case of obviousness must be commensurate in scope with the claims to which it pertains. See In re Dill and Scales, 202 USPQ 805 (CCPA 1979).

The combined teaching of Klock and Rombach does not disclose the claimed plasticizers and their amount.

Phillips discloses that the **tetraethyleneglycol di-n-heptanoate (4G7)** can be incorporated into polyvinyl butyral as a plasticizer using techniques that are usually used for other plasticizers. The polyvinyl butyral and plasticizer are present in quantities which result in a compatible admixture. The quantities of plasticizer which can be added to any polyvinyl butyral vary according to the residual hydroxyl content of the polyvinyl butyral. Thus, in polyvinyl butyral having a residual hydroxyl content of 20 percent, as much as 49 parts by weight of 4G7 plasticizer can be added per each hundred parts of polyvinyl butyral, which is within the claimed range (US'262, col. 2, line 65 through col. 3, line 8; US'351, col. 2, lines 49-38).

All the references are analogous art because they are from the same field of endeavor concerning plasticized polyvinyl butyral compositions.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate tetraethyleneglycol di-n-heptanoate (4G7) as a plasticizer in the claimed amount as taught by Phillips in combined Klock's and Rombach's process for preparing PVB composition because such plasticizers

provide a balance of mechanical properties satisfactory for subsequent handling and performance requirements (US'351, col. 1, lines 10-12), and thus to arrive at the subject matter of instant claim 6.

The combined teaching Klock, Rombach and Phillips does not disclose that the obtained polyvinyl butyral resin composition to form a sheet having a tensile creep of less than 2.5.

In view of substantially identical process, it is the examiner position that Klock, Rombach and Phillips's process for preparing PVB composition possesses this property because the process contains substantially identical main steps, used the same meso and racemic stereoisomers of butyral monomers, acidic aqueous PVA solution having the same concentration and hydrochloric acid, the same surfactants and plasticizers in the amounts within the claimed ranges, and the obtained final products have the same main properties (hydroxyl number and meso to racemic ratio (M/R) are within the claimed ranges). Since the USPTO does not have equipment to do the analytical test, the burden is now shifted to the applicant to prove otherwise. In re Best, 195 USPQ 430, (CCPA 1977).

It is axiomatic that one who performs the steps of a process must necessarily produce all of its advantage. Mere recitation of a newly discovered property or function what is inherently possessed by the things or steps in the prior art does not cause a claim drawn to those things to distinguish over the prior art. Leinoff v. Louis Milona & Sons, Inc. 220 USPQ 845 (CAFC 1984).

11. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Klock in view of Rombach and Phillips as applied to claims 6, 10 and 11 above, and further in view of Aurenty et al. (U. S. Patent 6,472,054).

The disclosure of Klock, Rombach and Phillips's references resided in § 10 is incorporated herein by reference.

With regard to the limitation of instant claim 9, the combined teaching of Klock, Rombach and Phillips does not disclose sodium methyl cocoyl taurate as the surfactant.

Aurenty discloses that illustrative examples of alkyl tail surfactants include sodium dodecylsulfate, isopropylamine salts of an alkylarylsulfonate, **sodium dioctyl succinate, sodium methyl cocoyl taurate, dodecylbenzene sulfonate**, alkyl ether phosphoric acid, N-dodecylamine, dicocoamine, 1-aminoethyl-2-alkylimidazoline, 1-hydroxyethyl-2-alkylimidazoline, and cocoalkyl trimethyl quaternary ammonium chloride, polyethylene tridecyl ether phosphate, and the like.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate sodium methyl cocoyl taurate as taught by Aurenty in Klock, Rombach and Phillip's process for preparing PVB composition because all of the above surfactants are functionally equivalents and can substitute each other.

12. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Klock in view of Rombach and Phillips as applied to claims 6, 10 and 11 above, and further in view of Kroggel et al. (U. S. Patent 5,559,175).

The disclosure of Klock, Rombach and Phillips's references resided in § 10 is incorporated herein by reference.

The combined teaching of Klock, Rombach and Phillips does not disclose that the acid compound or mixture of acid compounds comprises phosphoric acid.

Kroggel discloses that all suitable acid catalysts are in principle all the acids which can be employed for the synthesis of the polyvinyl acetals known to date, for example strong mineral acids, such as, for example, **hydrochloric acid**, sulfuric acid, **phosphoric acid**, nitric acid and the like (col. 5, lines 23-25).

All the above references are analogous art because they are from the same field of endeavor concerning new processes for producing polyvinyl acetal resin.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ phosphoric acid as taught by Kroggel in combined Klock, Rombach and Phillips's process for producing polyvinyl butyral resin instead of hydrochloric acid because they are functional equivalents and can be substituted by each other with reasonable expectation of success.

Thus, the combination of Klock, Rombach, Phillips, Kroggel and Aurenty renders claims 6 and 9-12 *prima facie* obvious in view of absent of unexpected results commensurate in scope of claims.

Response to Arguments

13. Applicant's arguments filed March 9, 2009 have been fully considered but they are moot the new ground(s) of rejection.

14. It appears that the focal Applicants argument resides in the contention that "[t]he propriety of a restriction requirement should be reconsidered when all the claims directed to the elected invention are in condition for allowance, and the nonelected invention(s) should be considered for rejoinder." M.P.E.P. § 821.04. Furthermore, "[r]ejoined claims must be fully examined for patentability in accordance with 37 CFR 1.104." *Id* (pages 7-8, the bridging paragraph).

15. It is noted that according MPEP 2113 [R-1] "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

Based upon the rejection of claims 6 and 9-12, which is in the current Office Action, the claimed invention is still not in the condition for allowance.

Therefore, as it was already mentioned in Office Action dated on November 28, 2006, the traversal of made restriction requirement was not found persuasive because the claimed common special technical feature in all claims is the polyvinylbutyral (PVB) resin composition having a hydroxyl number of about 15 to about 34 and a mixture of meso and racemic stereoisomers in which the ratio of meso stereoisomers to racemic stereoisomers is in the range of from about 2.5 to about 5.0, and this common special technical feature lacks of novelty.

16. In response to Applicants argument that although Applicants and Klock have determined creep by different methods and at different temperatures, both Klock's values and Applicants' values are reported as percentage changes in the size of the test specimen (see specification on page 12 at lines 13 to 28; Klock on page 3 at lines 28 to 44; English translation, middle of page 4; pages 10-11, the bridging paragraph), it is noted that Klock discloses compression creep test (pages 5-6), which is completely different from Applicant's test of Tensile Creep Procedure (the specification, page 12, lines 13-28). Thus, Examiner fully agree with Applicants remarks that Applicants and Klock have determined creep by different methods and at different temperatures, and the obtained results certainly could not be compared with each other, even if they both were determined in percentage.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL M. BERNSHTEYN whose telephone number is (571)272-2411. The examiner can normally be reached on M-Th 8-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on 571-272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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